

Remarks

This Application has been carefully reviewed in light of the Final Office Action mailed August 26, 2004. Although Applicant believes all claims are allowable without amendment, to expedite issuance of this Application, Applicant has made clarifying amendments to Claims 1, 3, 5, 7, 9, 11, 13, 15, and 17. None of these changes are considered necessary for patentability. Furthermore, since the amendments do not raise new issues requiring further consideration or searching and clearly place the claims in better condition for appeal, Applicant respectfully requests the Examiner to enter the amendments. Applicant respectfully requests reconsideration and allowance of all pending claims.

Allowed Subject Matter

Applicant notes with appreciation the Examiner's statement that Claims 19-21 are allowed.

Claim Rejections Pursuant to 35 U.S.C. § 112

The Examiner rejects Claims 3-6, 9-12, and 15-18 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. In order to expedite issuance of this Application, Applicant has made clarifying amendments to Claims 3, 5, 9, 11, 15, and 17. These amendments do not narrow the scope of the claims. Applicant respectfully requests that the Examiner withdraw this rejection.

Claim Rejections Pursuant to 35 U.S.C. § 102

The Examiner rejects Claims 1-18 and 22-24 under 35 U.S.C. § 102(e) as being anticipated by U.S. Application Publication 2002/103686 A1 by Slocum ("*Slocum*"). Applicant respectfully disagrees.

Slocum discloses a system for determining whether a manufacturer has the ability to produce additional amounts of one or more intermediate products and/or by-products to enable the manufacturer to negotiate more favorable contract terms with other entities. *See e.g.*, Paragraph 0023. The amount of additional intermediate products and/or by-products is determined using sequential forecasting, which refers to "a sequence of steps or calculations used to predict demand for one or more intermediate products, one or more by-products, or

both.” *See e.g.*, Paragraph 0030. According to *Slocum*, the system, using the future end product demand for the product and the manufacturing capability of the manufacturing site, determines “whether additional amounts of one or more intermediate products can be produced, and, if so, in what amounts.” *See e.g.*, Paragraph 0030. Determining the additional amounts of intermediate products and/or by-products that the manufacturing site can produce allows the manufacturer to more accurately predict the amount of intermediate products and corresponding by-products that can be produced in a given time period, which may allow the manufacturer to generate appropriate demand for the intermediate and by-products, and to set more profitable prices for the intermediate and/or by-products. *See e.g.*, Paragraph 0032.

However, *Slocum*, whether considered alone or in combination with knowledge generally available to those having ordinary skill in the art at the time of invention, does not disclose, teach, or suggest various limitations recited in Applicants’ claims. Applicants discuss independent Claim 1, as an example. For example, nowhere does *Slocum* disclose “using one or more processing units, determining an estimated lean buffer stock value based on a comparison of the cumulative forecasted demand values and the cumulative forecasted production values for the plurality of future time windows in the future planning horizon,” where the estimated lean buffer stock value represents “an estimated quantity of the product to use as a lean buffer stock for the future planning horizon to allow a manufacturer to produce a substantially constant amount of the product during each of the future time windows within the future planning horizon” as recited in Claim 1 as amended.

The Examiner asserts that a “lean buffer stock is inherent in any manufacturing facility. However, if not inherent, the Examiner takes Official Notice that lean buffer stocks are used in manufacturing facilities as a ‘safety factor,’ extra inventory, or reserve so that the production can continue even if demand outpaces production.” *Office Action, Page 4*. Applicant respectfully disagrees and objects to the taking of Official Notice. Applicant respectfully submits that the Examiner is mistakenly using the phrase “lean buffer stock” as recited in Claim 1 to refer to conventional safety stock, which Applicant acknowledges is well-known in the field of inventory management to protect against uncertainty in forecasted demand (i.e., differences between actual demand and forecasted demand). In contrast, as the limitations recited in Claim 1 make clear, the “lean buffer stock” recited in Claim 1 is to “allow a manufacturer to produce a substantially constant amount of the product during each

of the future time windows within the future planning horizon.” For example, a lean buffer stock value may be determined for the future planning horizon to allow substantially constant production of the product during each of the future time windows in the future planning horizon, then a safety stock value may be determined for each of the future time windows in the future planning horizon to protect against uncertainty in forecasted demand in each of the future time windows in the planning horizon, resulting in an inventory target for the start of the future planning horizon that reflects both the lean buffer stock value for the future planning horizon and a safety stock value for the first time window in the future planning horizon.

In any event, *Slocum* clearly does not disclose, teach, or suggest at least the following limitations recited in Claim 1 as amended:

- ***using the computer system, determining an estimated lean buffer stock value based on a comparison of the cumulative forecasted demand values and the cumulative forecasted production values for the plurality of future time windows in the future planning horizon, the estimated lean buffer stock value representing an estimated quantity of the product to use as a lean buffer stock for the future planning horizon to allow a manufacturer to produce a substantially constant amount of the product during each of the future time windows within the future planning horizon; and***
- ***using the computer system, making the estimated lean buffer stock value available for use in determining a quantity of the product to manufacture to produce the lean buffer stock for the future planning horizon, the lean buffer stock allowing the manufacturer to produce the substantially constant amount of the product during each of the future time windows within the future planning horizon.***

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); M.P.E.P. § 2131. In addition, “[t]he elements must be arranged as required by the claim.” *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990); M.P.E.P. § 2131. As illustrated above, *Slocum* clearly does not disclose, either expressly or inherently, each and every limitation recited in Applicant’s Claim 1, as is required under the M.P.E.P. and governing Federal Circuit cases.

For at least these reasons, Applicant respectfully submits that independent Claim 1 is patentable over *Slocum*. Thus, Applicants respectfully request reconsideration and allowance of Claim 1 and all claims depending therefrom.

Applicant respectfully submits that independent Claims 7 and 13 are patentable over *Slocum* for at least the same reasons discussed above with respect to independent Claim 1. Thus, Applicant respectfully requests reconsideration and allowance of Claims 7 and 13 and all claims depending therefrom.

Claim Rejections Pursuant to 35 U.S.C. § 103

The Examiner rejects Claims 1-18 and 22-24 under 35 U.S.C. § 103(a) as being unpatentable over *Slocum* in view of U.S. Patent 6,415,260 to Yang et al. ("*Yang*"). The Examiner also rejects Claims 1-18 and 22-24 under 35 U.S.C. § 103(a) as being unpatentable over *Yang*. Applicant respectfully disagrees.

a. *Slocum* is Disqualified as Prior Art

At the outset, Applicant notes that according to 35 U.S.C. § 103(c), subject matter that qualifies as prior art only under 35 U.S.C. § 102(e) "shall not preclude patentability under Section 103 where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person." In other words, subject matter that is considered prior art only under Section 102(e) is disqualified from use as a prior art reference under Section 103 if that subject matter and the claimed invention "were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person." *M.P.E.P.* §§ 706.02(k) and 706.02(l)(1).

To the extent that *Slocum* may qualify as prior art under Section 102(e), Section 103(c) disqualifies *Slocum* as a prior art reference against the claimed invention. The inventors of *Slocum* and of the present Application were under a common obligation of assignment to, and the inventions were actually assigned to, i2 Technologies US, Inc. Moreover, *Slocum* was not published until August 1, 2002, more than one year after Applicant's April 11, 2001 filing date. As a result, Applicant respectfully submits that *Slocum* is disqualified as a prior art reference against the claimed invention. For at least this

reason, Applicant respectfully submits that the Section 103 rejection relying on *Slocum* cannot be properly maintained. Applicant respectfully requests reconsideration and allowance of independent Claims 1, 7, and 13, and all claims depending therefrom.

b. All Claims are Patentable Over Yang

To defeat a patent under 35 U.S.C. § 103, “the prior art reference must teach, disclose, or suggest all the claim limitations.” *In re Vaeck*, 947 F.2d 488 (Fed. Cir. 1991); M.P.E.P. § 706.02(j). Applicant respectfully submits that *Yang*, taken alone or in combination with the knowledge generally available to one of ordinary skill in the art at the time of invention, fails to disclose, teach, or suggest, either expressly or inherently, various limitations of independent Claims 1, 7, and 13.

Yang discloses a system for determining the future throughput of semiconductor wafers (i.e., future capacity demand) in a processing system and an appropriate quantity of semiconductor wafers to input into the processing system to ensure that the system runs smoothly. *See e.g.*, Col. 4, Lines 25-48. The supervisors of the processing system use the future capacity demand and the input allocation figures to vary the conditions of the processing system. *See e.g.*, Col. 4, Lines 49-61. However, *Yang*, whether considered alone or in combination with knowledge generally available to those having ordinary skill in the art at the time of invention, fails to disclose, teach, or suggest various limitations recited in Applicant’s claims. Applicant discusses independent Claim 1, as an example. For example, nowhere does *Yang* disclose “using one or more processing units, determining an estimated lean buffer stock value based on a comparison of the cumulative forecasted demand values and the cumulative forecasted production values for the plurality of future time windows in the future planning horizon,” where the estimated lean buffer stock value represents “an estimated quantity of the product to use as a lean buffer stock for the future planning horizon to allow a manufacturer to produce a substantially constant amount of the product during each of the future time windows within the future planning horizon” as recited in Claim 1 as amended.

The Examiner asserts that “it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify *Yang* to include a reserve as a lean buffer stock. Such a modification would have enabled the facility to better meet demand

orders.” *Office Action, Page 5.* Applicant respectfully disagrees. As noted above, Applicant respectfully submits that the Examiner is mistakenly using the phrase “lean buffer stock” as recited in Claim 1 to refer to conventional reserve or safety stock, which Applicant acknowledges is well-known in the field of inventory management to protect against uncertainty in forecasted demand (i.e., differences between actual demand and forecasted demand). In contrast, as the limitations recited in Claim 1 make clear, the “lean buffer stock” recited in Claim 1 is to “allow a manufacturer to produce a substantially constant amount of the product during each of the future time windows within the future planning horizon.” For example, a lean buffer stock value may be determined for the future planning horizon to allow substantially constant production of the product during each of the future time windows in the future planning horizon, then a reserve or safety stock value may be determined for each of the future time windows in the future planning horizon to protect against uncertainty in forecasted demand in each of the future time windows in the planning horizon, resulting in an inventory target for the start of the future planning horizon that reflects both the lean buffer stock value for the future planning horizon and a reserve or safety stock value for the first time window in the future planning horizon.

In any event, *Yang* clearly fails to disclose, teach, or suggest at least the following limitations recited in Claim 1 as amended:

- ***using the computer system, determining an estimated lean buffer stock value based on a comparison of the cumulative forecasted demand values and the cumulative forecasted production values for the plurality of future time windows in the future planning horizon, the estimated lean buffer stock value representing an estimated quantity of the product to use as a lean buffer stock for the future planning horizon to allow a manufacturer to produce a substantially constant amount of the product during each of the future time windows within the future planning horizon; and***
- ***using the computer system, making the estimated lean buffer stock value available for use in determining a quantity of the product to manufacture to produce the lean buffer stock for the future planning horizon, the lean buffer stock allowing the manufacturer to produce the substantially constant amount of the product during each of the future time windows within the future planning horizon.***

c. No Motivation or Suggestion to Modify *Yang*

At the outset, Applicant traverses the Examiner’s apparent reliance on common knowledge or his personal knowledge in rejecting claim limitations as being either obvious or

considered known. *Office Action Pages 4-5*. Specifically, the Examiner asserts that “the Examiner takes Official Notice that lean buffer stocks are used in manufacturing facilities as a ‘safety factor,’ extra inventory, or reserve so that the production can continue even if demand outpace production.” The Examiner also asserts that “it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify *Slocum* [and *Yang*] to include a reserve as a lean buffer stock. Such a modification would have enabled the facility to better meet demand orders.”

While in limited circumstances an examiner may take Official Notice of facts not in the record or rely on “common knowledge” in making a rejection, “such rejections should be judiciously applied.” *See* M.P.E.P. § 2144.03. It is not appropriate for an examiner to take Official Notice of facts without citing a prior art reference “where the facts asserted to be well known are not capable of instant and unquestionable demonstration as being well-known. For example, assertions of technical facts in the areas of esoteric technology or specific knowledge of the prior art must always be supported by citation to some reference work recognized as standard in the pertinent art.” *Id.* (citing *In re Ahlert*, 165 U.S.P.Q. 418, 420-21 (C.C.P.A. 1970)). To the extent that the Examiner maintains this rejection based on “Official Notice,” “well-known art,” “common knowledge,” or other information within the Examiner's personal knowledge, Applicant respectfully requests that the Examiner cite a reference as documentary evidence in support of this position or provide an affidavit in accordance with M.P.E.P. § 2144.03 and 37 C.F.R. § 1.107.

Moreover, the Examiner has not cited language in *Yang* or information commonly known to those skilled in the art that provides the necessary teaching, suggestion, or motivation to modify *Yang* in the manner the Examiner proposes. The M.P.E.P. sets forth a strict legal standard for finding obviousness based on modification of a reference. According to the M.P.E.P., “Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge [that was] generally available to one of ordinary skill in the art” at the time of the invention. M.P.E.P. 2143.01. The “fact that references can be combined or modified does not render the resultant combination [or modification] obvious

unless the prior art also suggests the desirability of the combination” or modification. *Id.* (emphasis in original).

The governing Federal Circuit case law makes this strict legal standard even more clear.¹ According to the Federal Circuit, “a showing of a suggestion, teaching, or motivation to combine . . . prior art references is an essential component of an obviousness holding.” *In re Sang-Su Lee*, 277 F.3d 1338, 1343 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25 (Fed. Cir. 2000)). “Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved.” *In re Dembiczak*, 175 F.3d 994, 999 (Fed. Cir. 1999). However, the “range of sources available . . . does not diminish the requirement for actual evidence.” *Id.* In *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board of Patent Appeals and Interferences, explaining that proper evidence of a teaching, suggestion, or motivation to combine or modify is essential to avoid impermissible hindsight reconstruction of an applicant's invention:

Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999 (quoting *W.L. Gore & Assoc., Inv. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983)) (emphasis added) (citations omitted).²

In the present case, the Examiner merely asserts, in conclusory fashion, that it “would have been obvious” to modify *Yang* to include a reserve as a lean buffer stock. *Office Action Page 5*. Yet, the Examiner has not cited to a reference or to knowledge generally available to those of ordinary skill in the art at the time of the invention providing any teaching,

¹ Note M.P.E.P. 2145 X.C. (“The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.”).

² See also *In Re Jones*, 958 F.2d 347, 351 (Fed. Cir. 1992) (“Conspicuously missing from this record is any evidence, other than the PTO’s speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at” the claimed invention.).

suggestion, or motivation to modify *Yang* in any way. Although Applicant does not admit that any proposed modifications of *Yang* are even possible, the mere fact that references can be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the modification. *In re Mills*, 916 F.2d 680 (Fed. Cir. 1990). Thus, the mere fact that the knowledge generally available would improve the teachings of another reference as asserted by the Examiner, does not provide the required teaching, suggestion, or motivation to modify. The showing must be clear and particular. *See, e.g., C.R. Bard v. M3 Sys., Inc.*, 48 U.S.P.Q.2d 1225, 1232 (Fed. Cir. 1998). Without such independent suggestion, the art is to be considered as merely inviting unguided and speculative experimentation which is not the standard with which obviousness is determined. *Agmen Inc. v. Chugai Pharmaceutical Co., Ltd.*, 927 F.2d 1200 (Fed. Cir. 1991).

Nothing in *Yang* teaches, suggests, or motivates the proposed modification. Applicant respectfully submits that speculation in hindsight that it “would have been obvious” to make the proposed modification because the proposed modification would be helpful is insufficient under the M.P.E.P. and governing Federal Circuit case law.

For at least this reason, Applicant respectfully submits that a *prima facie* case of obviousness cannot be properly maintained with respect to Claims 1, 7, and 13 as the Examiner has not shown the requisite proof necessary to establish a suggestion or motivation to modify *Yang* in the manner the Examiner proposes. Applicant respectfully requests reconsideration and allowance of independent Claims 1, 7, and 13, and all claims depending therefrom.

No Waiver

All of Applicant’s arguments and amendments are without prejudice or disclaimer. Additionally, Applicant has merely discussed example distinctions from the *Slocum* and *Yang* references. Other distinctions may exist, and Applicant reserves the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicant does not acquiesce to the Examiner’s additional statements. The example distinctions discussed by Applicant are sufficient to overcome the anticipation and obviousness rejections.

Conclusion

For at least these reasons, Applicant respectfully requests reconsideration and allowance of all pending claims.

If the Examiner believes a telephone conference would advance prosecution of this Application in any manner, the Examiner is invited to contact Christopher W. Kennerly, Attorney for Applicant, at the Examiner's convenience at (214) 953-6812.

Applicant does not believe that any additional fees are due. However, the Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 02-0384 of Baker Botts L.L.P.

Respectfully submitted,

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